BOOKS RECEIVED.

COMPENDIUM OF MICROSCOPICAL TECHNOLOGY; A guide to Physicians and Students in the use of the Microscope, and in the preparation of Histological and Pathological specimens. By CARL SEILER, M. D. Published by D. G. Brinton, Philadelphia, 1881.

The author of this work has a high reputation for preparing mounted specimens for Microscopical study, and therein gives short and clear descriptions of his own methods, which have given such satisfactory results. The reader is, therefore, not perplexed by being instructed in the various methods suggested by many authorities, but a clear line of conduct is indicated for him by Dr. Seiler, which may be relied on as being satisfactory.

The work is written for medical students, and for that reason the usual subject matter found in Manuals of Microscopy is altogether omitted, neither are descriptions given of tissues, and the student is referred for histological details to works devoted to histology.

Without intending to cast any reflection on the body of the work, we are inclined to consider the appendix the most valuable part of Dr. Seiler's book. In it the author presents a short, concise, and, at the same time, comprehensive classification of the more common tumors and other neoplasms in tabular form; these, indeed, will be welcome to the student of pathological histology. The author claims to have exercised great care in its compilation, and to have introduced all the accepted modern views on the subject, so as to bring it up to the standard of the present time.

POPULAR LECTURES ON SCIENTIFIC SUBJECTS. By H. HELMHOLTZ, Professor of Physics in the University of Berlin. Translated by E. ATKINSON, Ph. D., F. C. S. Second Series. D. Appleton & Co. New York, 1881.

The present volume presents a series of addresses and lectures delivered by Professor Helmholtz during a period of six years, from 1871 to 1877. The contents show that the following subjects are treated:

1. An address delivered before the Leibnitz meeting of the Academy of Sciences, 1870. In memory of Gustav Magnus.

2. A lecture on the Origin and Significance of Geometrical Axioms, delivered at Heidelberg, 1870.

3. The substance of a series of lectures on the relation of optics to painting, delivered at Cologne, Berlin and Bonn.

4. Lecture on the Origin of the Planetary System, delivered in 1871.

5. An address delivered in 1877, on the Anniversary of the foundation of the Institute for the Education of Army Surgeons: or, Thought in Medicine.

Perhaps the only popular paper in the series is that "On the Origin of the Planetary System," in which the various hypotheses connected with the subject are explained in simple and familiar language. Professor Helmholtz appears to have handled this subject in a manner which must have been a source of delight to a mixed audience. Touching on extinct suns he explained that a time would arrive when our own sun would cease to develop the heat which is a source of vitality to this earth. But he explained that 17,000,000 of years would lapse before this "intensity of sunshine, would be diminished, and that circumstances may even prolong this period."

Looking forward to such a period when our sun shall be extinguished, Professor Holmholtz observes that considering the wonderful adaptability to the conditions of life which all organisms possess, who knows to what degree of perfection our posterity will have developed in 17,000,000 of years, and whether our fossilized bones will not seem to them as monstrous as those of *Ichthyosaurus* now do; and whether they, adjusted for a more sensitive state of equilibrium, will not consider the extremes of temperature, within which we now exist, to be just as violent and destructive as those of the older geological times appear to us? Yea, even if sun and earth should solidify and become motionless, who could say what new worlds would not be ready to develop life? Meteoric stones sometimes contain hydro-carbons; the light of the heads of comets exhibits a spectrum which is most like that of the electrical light in gases containing hydrogen and carbon. But carbon is the element, which is characteristic of organic compounds, from which living bodies are built up. Who knows whether these bodies, which everywhere swarm through space, do not scatter germs of life, wherever there is a new world, which has become capable of giving place to organic bodies? And this life we might perhaps consider as allied to ours in its primitive germ, however different might be the form which it would assume in adapting itself to its new dwelling place.

Probably the lectures "On the Relation of Optics to Painting" and the address "On Thought in Medicine" are the most valuable productions of Professor Helmholtz to be found in this volume, and as space for their proper examination cannot be used in this notice, references will be again made to them on another occasion.

This work should find a place in every library of standard works of Literature.

A MOST successful experiment in theatre illumination was tried on March 30 and 31, at the Athenæum of the Rue des Martyrs, Paris, with the Werdermann incandescent light. The peculiarity of it is that it can be graduated at will for scenic effects, either by introducing resistance coils or varying the velocity of the Gramme machine.

EFFECT OF TEMPERATURE UPON THE ELECTRICAL RESISTANCE OF SELENIUM.—Mr. Shelford Bidwell, in the *Philosophical Magazine* for April, gives an account of some experiments made on the above subject. He says: "The room being 14° Centigrade, a selenium cell was immersed in turpentine at 8° C. There was a great and sudden fall in the resistance. The temperature was then gradually raised. In passing from 8° to 24° the resistance steadily increased; from 24° upwards it rapidly diminished. For this cell, therefore, the resistance is greatest at 24° C. Five other cells were afterwards submitted to the same operation, and their resistance was found to be greatest at temperatures of 23°, 14°, 30°, 25°, and 22° respectively."

ELECTRIC TRANSMISSION OF FORCE FOR WORKING CRANES.—According to E. Hospitalier, the use of hydraulic pressure for the transmission of the power required in working cranes in docks, involves a loss which, in some cases, may reach 88 per cent. This evil is entirely obviated, in addition to a great simplification of the entire plant, by means of electric transmission of power, which enables the original steam power to be fully utilised even when the crane is raising much less than its maximum load. If we reduce the loading of a crane the electro-magnetic machine which drives it will have less work to do, and will revolve more rapidly, and the stronger counter-currents thus produced will react upon the dynamo-electric machine in such a manner that there is a less current produced, and a less demand is made upon the steam-power. The only question is, how the current is to be divided into several unequal branches capable of being varied in strength at any moment.—*La Lumière Electrique.*

ON THE STATIONARY ELECTRIC CURRENT IN CONDUCTIVE SURFACES, AND ON THE GALVANIC RESISTANCE OF PSILOMELAN.—Hugo Meyer, in the first portion of this memoir, discusses the ramification of the current, and the calculation of the resistance of flat plates. The experimental results agree with calculation. In the second part the author's experimental results agree with calculation. In the second part the author examines the resistance of thin plates of psilomelan, and obtains results antagonistic to those of Braun, who found the resistance decrease under the influence of an induction current.